

REMARKS

Claims 1-28 are pending in the instant application. Claims 2-4, 6-12, 15-16 and 19-27 have been withdrawn from consideration pursuant to the Examiner's Restriction Requirement dated 25 May 2004. In the Office Action, claims 1, 5, 13-14 and 27-28 are rejected under 35 U.S.C. § 103(a) as allegedly obvious over U.S. Pat. No. 5,784,038 to Irwin (hereinafter, "Irwin"), in view Japanese Published Application JP 08-101672, inventor Arai Naohisa (hereinafter, "Naohisa"). Claims 17-18 are rejected under 35 U.S.C. § 103(a) as allegedly obvious over Irwin, in view of Naohisa, and further in view of U.S. Pat. No. 6,621,488 to Takeuchi, et al. (hereinafter, "Takeuchi"). Applicant respectfully traverses the rejections for at least the reasons set forth below.

Independent method claim 1 and apparatus claim 5, each recite, *inter alia*, steps or structure including four adjacent pixels having four different color/achromatic illuminating lights, and that the colors of the illuminating lights within the four-pixel unit are switched in each successive field period. Accordingly, as disclosed in the specification, if a viewer were to abruptly shift their line of sight, they would not perceive a flickering primary color, as is often the case with display systems according to the prior art, including those of a class to which Irwin is a member.

The Office Action avers that Irwin discloses, in Figs. 1a-c, and Col. 1, lines 19-48, illuminating a display device having a matrix of pixels, with adjacent four pixels as a unit, with illuminating lights including a red illuminating light, a green illuminating light, a blue illuminating light, and an achromatic illuminating light, as with pixel 12 and subpixels 11, 13, 15, 17. The Office Action further avers that Irwin teaches generating a red video signal, a green video signal, a blue video signal, and an achromatic video signal from a color video signal so as

to correspond to the colors of the illuminating lights applied to the pixels in each unit, for example at Fig. 3, and Col. 4, lines 20-43. Applicant respectfully disagrees.

The cited portion of Irwin discloses, by way of prior art background, that a color active matrix display 10 has pixels 12 including subpixels 11, 13, 15, 17. The Office Action then draws from an entirely different apparatus of Irwin, a monochrome active matrix display with reference to Fig. 3. Irwin itself contrasts the two displays, showing that the pixels (22) of the monochrome display (20) are larger and pass more light (Col. 4, lines 12-19). Irwin further discloses that in order to project a color image using a monochrome LCD display that a color wheel (38) and associated controller successively display RGB images towards a screen (32). However, Irwin makes clear that these are not the same device, or even combinable, but alternates. Irwin does not propose to combine a color active matrix LCD and monochrome LCD with a color wheel assembly as suggested in the Office Action. Rather, Irwin discloses that to achieve larger pixels to increase transmission of light, the fixed color subpixels of Figs. 1a-1c are replaced with monochrome pixels and a rotating color wheel assembly.

Further, even if the proposed modification of Irwin were proper, it still does not meet the claim language by its own terms. Claim 1 recites "generating a red video signal, a green video signal, a blue video signal, and an achromatic video signal from a color video signal so as to correspond to the colors of the illuminating lights applied to the pixels in each unit." Each color wheel embodiment of Irwin includes only three color signals, RGB. There is no teaching or suggestion in Irwin of an achromatic color signal, precisely because Irwin does not contemplate the switching of colors in a color active matrix LCD. Therefore, Irwin does not teach so much as it attributed to it. These deficiencies of Irwin relative to the claims are not fully accounted for.

The Office Action goes on to admit, as it must, that Irwin does not disclose "the illuminating lights applied to the pixels in each unit have different colors from each other and the colors of the illuminating lights are switched in each field period." The Office Action offers Naohisa as allegedly teaching these features. In the first instance, the machine-generated translations such as the one of Naohisa provided with the Office Action are notoriously inaccurate and not deserving of any credit as a faithful English representation of the teachings in the reference. (See, "Notices", Naohisa translation, p. 2) In this particular instance, the translation is nearly indecipherable. Applicant respectfully submits that it cannot form the required factual basis for a proper rejection¹.

Insofar as the translation of Naohisa is comprehensible, it discloses that a sequential field type color display system and method, wherein an achromatic signal is generated as a minimum of the red, green and blue primary color signals, and this achromatic color signal is subtracted from the primary color signals. Further, the four fields of the primary color signals and the achromatic signal together form a single frame.

Therefore, even presuming that there were some motivation in the prior art for one of ordinary skill to combine Irwin and Naohisa, the combination would still not reach the claims. As combined, the primary RGB signals of Irwin could be processed as in Naohisa to arrive at a derived achromatic signal, which would then be subtracted from the primary signals to arrive at a modified primary color signals. The modified primary color signals and the achromatic signal could then be displayed sequentially to form a single frame.

¹ See, *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) ("The PTO has the burden under section 103 to establish a *prima facie* case of obviousness. It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.") (Citations omitted)

However, this combination fails to meet the claims, in part because the monochromatic active matrix display of Irwin relied upon for the combination does not include four adjacent pixels as a unit, with illuminating lights including a red, green, blue, and achromatic. For that, Irwin refers to a color active matrix display of the prior art, which was to be improved upon and overcome. Furthermore, even in combination, the monochromatic active matrix display of Irwin and the teachings of Naohisa do not teach or suggest there that the colors of the illuminating lights within a four-pixel unit are switched in each successive field period. Point in fact, there is no teaching of switching of color patterns within a four pixel unit in either Irwin or Naohisa. Rather, the color pattern of each pixel is constant, and not changed in each field period, as recited in the claims.

It has been held by the courts that to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. See *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). As illustrated above, neither Irwin, nor Naohisa, taken alone or in any combination, teaches or suggest all recited features of the claims. Therefore, Applicant respectfully submits that the claims are patentably distinguished over the references. For at least this reason, favorable reconsideration and withdrawal of the rejections of claims 1 and 5 is kindly requested.

Turning to claim 13, the claim recites an apparatus comprising, *inter alia*, a display device having a matrix of pixels and a condensing lens disposed on a surface thereof for applying illuminating light in association with every four pixels of said matrix. The Office Action avers that this feature is taught by Irwin at Fig. 3, and Col. 4, lines 20-43 (ref. 34, 36), in combination with Figs. 1a-1c, 3, and their associated description. Applicant respectfully disagrees.

In the first instance, the previous Office Action (mailed 24 August 2004, at p. 4) took the **precisely opposite position, averring that Irwin did not teach** a condensing lens disposed on a surface of the active matrix. Rather, the Office Action relied upon Irwin in combination with Marshal (U.S. Pat. No. 6,738,104-B2) in attempting to reach the claim. That rejection has since been withdrawn and considered moot.

Further, this revised view suffers from the same improper combination and conflation of disparate embodiments in Irwin, without any supporting motivation for one skilled in the art to so modify Irwin and arrive the proposed result. Moreover, even if the proposed combination were proper, it still does not reach claim 13. Irwin teaches a projection lens 34, 36, for projection images of the monochrome active matrix LCD onto a display screen (32). This lens is not disposed on the surface of the active matrix, as recited in the claim. Rather, Irwin Fig. 3 shows that the lens the Office Action proposes to read onto the claimed structure is separated from the active matrix LCD (46) by at least the color wheel (38). Additionally, the claim recites that the condensing lens is associated with every four pixels of the active matrix. In contrast, the projection lens of Irwin is a single lens for the entire active matrix.

Therefore, the cited structure of Irwin does not teach so much as is attributed to it, and accordingly fails to reach claim 13. Naohisa is not even alleged to offer any teaching or suggestion to ameliorate this deficiency of Irwin relative to claim 13. Applicant respectfully submits that claim 13 is patentably distinguished over the applied references, taken singly or in any combination. See, *Royka, supra*. Favorable reconsideration and withdrawal of the rejection is kindly requested.

Claims 14, 17-18 and 27-28 each depend either directly or indirectly, from independent claim 13. These dependent claims are each separately patentable, but are offered as patentable

for at least the same reasons as their underlying independent base claims. Specifically with respect to claims 17 and 18, the addition of Takeuchi is not purported to cure, nor does it cure, the above-noted deficiencies of Irwin and Naohisa relative to claim 13. Therefore, favorable reconsideration and withdrawal of the rejection of dependent claims 14, 17-18 and 27-28 is kindly requested.

Applicant reiterates its position that claims 1, 5, and 13 are in fact generic to the identified species, stated in the election filed 25 June 2004 responsive to the Restriction Requirement. In light of the patentability of generic claims 1, 5 and 13, Applicant kindly requests a rejoinder and indication of allowability of all claims.

In the interest of brevity, Applicant has addressed only so much of the rejection(s) as is considered sufficient to demonstrate the patentability of the claim(s). Applicant's failure to address any part of the rejection should not be construed as acquiescence in the propriety of such portions not addressed. Applicant maintains that the claims are patentable for reasons other than these specifically discussed, *supra*.

In light of the foregoing, Applicant respectfully submits that all claims recite patentable subject matter, and kindly solicits an early indication of allowability of all claims. If the

Examiner has any reservations in allowing the claims, and believes that a telephone interview would advance prosecution, he is kindly requested to telephone the undersigned at an earliest convenience.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "David J. Torrente", written over the printed name.

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